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AIC-321
Supplement 5

SEMIANNUAL LIST OF PUBLICATIONS AND PATENTS WITH ABSTRACTS

Western Utilization Research Branch
Agricultural Research Service
United States Department of Agriculture

JULY 1 TO DECEMBER 31, 1953

ANALYTICAL
FIELD CROPS--Alfalfa,
Sugar Beets, Wheat
FRUIT AND PECTIN
PHARMACOLOGY
POULTRY PRODUCTS
VEGETABLES
WOOL
RUBBER

FRUIT AND VEGETABLE CHEMISTRY LABORATORY, Pasadena 5, California
FRUIT AND VEGETABLE PRODUCTS LABORATORY, Prosser, Washington

A previous supplement in this series (AIC-321, Supplement 2) included lists for all units of the Bureau of Agricultural and Industrial Chemistry in the Western Region. That supplement is available on request, as are all earlier lists. This supplement, like Supplements 2 to 4, also includes abstracts of publications and patents for all western regional units of the Bureau. In the reorganization of the Department of Agriculture that became effective in January, 1954, the name included above, under the title of this List, was adopted.

Publications with AIC preceding their numbers (for example AIC-360) are mimeographed, and supplies are maintained for free distribution. A limited number of reprints of journal articles are available, usually for a short period following publication. The asterisk (*) before a title indicates that the supply of reprints of that publication was exhausted at the time this list was prepared. Photostat copies of journal articles can be purchased at miminal cost through the Library of the United States Department of Agriculture, Washington 25, D. C.

All patents are assigned to the U. S. Government. Patents can be obtained only by purchase from the United States Patent Office, Washington, D. C., for 25 cents each.

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OTHER LISTS

Lists of publications and patents with abstracts (similar to this one) from other Regional Utilization Research Branches of the Agricultural Research Service, U. S. Department of Agriculture, are available on request. Addresses are as follows:

Eastern Utilization Research Branch
Chestnut Hill Station, Philadelphia 18, Pa.

Northern Utilization Research Branch
825 North University St., Peoria 5, Ill.

Southern Utilization Research Branch
2100 Robert E. Lee Blvd., New Orleans 19, La.

ANALYTICAL (Other analytical papers are listed elsewhere)

QUALITATIVE PAPER CHROMATOGRAPHY OF SUGARS IN PLANTS. K. T. Williams and A. Bevenue, Jour. Assoc. Offic. Agr. Chem. 36(3):969-79, Aug. 1953. Reagents and techniques selected from the literature and from the authors' experience are given for the chromatographic study of sugars in plant materials.

RAPID ACCURATE DETERMINATION OF CARBOHYDRATES AND OTHER SUBSTANCES. DICHROMATE HEAT-OF-DILUTION METHOD. H. F. Launer and Y. Tomimatsu, Analyt. Chem. 25(11): 1767-69, Nov. 1953. Carbohydrates such as sugars, starches, etc. and many types of aliphatic and aromatic compounds can be determined within 5 minutes to within a few tenths percent of theory in the presence of water and ash.

RAPID ACCURATE DETERMINATION OF CELLULOSE WITH THE DICHROMATE HEAT-OF-DILUTION METHOD. H. F. Launer and Y. Tomimatsu, Analyt. Chem. 25(11):1769-70, Nov. 1953. Cellulose can be determined within 5 minutes to a few tenths percent of theory in presence of water, ash, and other non-oxidizables.

MOISTURE DETERMINATION OF FOODS BY HYDROGEN NUCLEI MAGNETIC RESONANCE. T. M. Shaw, R. H. Elsken, and C. H. Kunsman, Jour. Assoc. Offic. Agr. Chem. 36(4): 1070-76, Nov. 1953. Results show that the magnetic resonance absorption due to hydrogen nuclei can be used to measure the water content of food materials. The principal limitation on the precision of the method appears to be lack of reproducibility of packing or non-uniformity of test specimens.

FIELD CROPS--Alfalfa, Sugar Beets, Wheat

Alfalfa

OILING ALFALFA MEAL FOR DUST CONTROL. G. R. Van Atta, C. R. Thompson, E. M. Bickoff, and W. D. Maclay, Feed Age 3(7):30-33, July 1953. In connection with studies on application of antioxidants in solutions of oils to dehydrated alfalfa meal to reduce loss of carotene, techniques were developed for application of oil. Oil alone is effective and is being used for control of dustiness of dehydrated meal. This report covers selection of oil, dosage, place of application in the dehydrating process, and equipment and its operation. The purpose is to describe principles of design rather than to present a model for exact copy. Several companies have used these principles in the design of equipment.

STABILIZATION OF LIPOIDAL SUBSTANCES. Patent No. 2,652,332 to H. S. Olcott and T. W. Campbell. Materials which contain carotene (alfalfa, dehydrated carrots, etc.) are treated with a minor proportion of 2-amino-3-hydroxybenzoic acid or the alkyl esters of this acid whereby oxidative deterioration of the carotene on storage is retarded. Sept. 15, 1953.

PRESERVATION OF FORAGE CROPS WITH PHENOL DERIVATIVES. Patent No. 2,651,572 to E. M. Bickoff, Sept. 8, 1953. Forage materials such as alfalfa are sprayed with a solution of 2,2'-methylene-bis(4-methyl-6-tertiarybutyl phenol) or similar derivative in order to stabilize the carotene content of the material whereby loss of carotene on storage is reduced.

Sugar Beets

BEET SUGAR LIQUORS--DETERMINATION AND CONCENTRATION OF LACTIC ACID IN PROCESSING LIQUORS. J. B. Stark, A. E. Goodban, and H. S. Owens, Jour. Agr. and Food Chem. 1(8):564-66, July 8, 1953. Examination has shown that cossettes contained less than 6 mg. of lactic acid per 100 g. of sucrose, and that diffusion juices contained 10 to 100 times as much. Samples of liquors have been taken from various cells in continuous and batch diffusers to locate the site of possible fermentation. Results are summarized and discussed.

FRACTIONATION OF ORGANIC ACIDS IN SUGAR BEETS BY ION EXCHANGE RESINS. H. S. Owens, A. E. Goodban, and J. B. Stark, Analyt. Chem. 25(10):1507-11, Oct. 1953. This report gives the experimental background and details for the method used at this Laboratory along with results recently obtained by application of the method to sugar beet diffusion juices. It is now possible to follow the effects of processing, variety, and other agronomic factors on the organic acid content of sugar beets.

METHYLENE-BIS-(N-PYRROLIDONE-2-CARBOXYLIC ACID). F. T. Jones, K. J. Palmer, and D. R. Black, Analyt. Chem. 25(12):1929-30, Dec. 1953. Methylene-bis-(N-pyrrolidone-2-carboxylic acid) is a new compound found in sugar-beet processing liquors. The optical and crystallographic properties of this compound have been determined by the methods of chemical microscopy and X-ray diffraction and are reported, together with photomicrographs of the crystals.

*CHEMISTRY--AN AID TO SUGAR BEET TECHNOLOGY. W. D. Maclay and H. S. Owens, The California Sugar Beet, 38, 39, 46, 1953. A review of chemical research related to manufacture of sugar from beets.

SEPARATION OF ORGANIC ACIDS. Patent 2,664,441 to H. S. Owens, J. B. Stark, and A. E. Goodban, Dec. 29, 1953. Organic acids are separated from one another by the use of an ion exchange bed conditioned to a particular pH whereby to obtain a cleaner separation of the different acids upon elution of the bed.

Wheat

THE ALBUMIN AND GLOBULIN PROTEINS OF WHEAT. J. W. Pence and A. H. Elder, Cereal Chem. 30(4):275-87, July, 1953. Purified samples of the albumin and globulin proteins of wheat were prepared, and certain physical and chemical properties determined by electrophoretic, ultracentrifugal, osmotic-pressure, and chemical examination.

APPROXIMATE ISOELECTRIC PH'S OF ALBUMINS FROM WHEAT FLOUR. J. W. Pence, Cereal Chem. 30(4):328-33, July 1953. Approximate mobilities and isoelectric pH's for apparently individual components of the albumin fraction of wheat flours were determined by electrophoresis on filter paper. This method gave good agreement with literature values for the isoelectric points of crystalline bovine serum albumin, ovalbumin, and beta-lactoglobulin.

COMPOSITION OF THE PENTOSANS EXTRACTED BY ACID FROM WHEAT: ITS RELATIONSHIP TO MILLING BEHAVIOR. W. S. Hale, A. Mohammad, and D. K. Mecham, Cereal Chem. 30(6):513-21, Nov. 1953. With a series of Pacific Northwest soft wheats, there is an inverse correlation between the amounts of pentosan extractable with dilute acid and their milling behavior. Determination of the individual pentoses in such extracts has shown that the amounts of xylose extracted are responsible for the correlation, while the amounts of arabinose extracted are not consistently related to milling behavior.

FRUIT AND PECTIN

CHANGES IN COMPOSITION OF NORTHWEST STANDARD DELICIOUS APPLES DURING STORAGE THAT AFFECT THEIR SUITABILITY FOR JUICE PRODUCTION. L. R. Leinbach, W. F. Talburt, and E. W. Carlsen (with Washington State Apple Commission), Food Technol. 7(10):404-08, Oct. 1953. Juice was pressed from two grades of standard Delicious apples, obtained from commercial packing houses, and assayed for total solids, total and reducing sugars, titratable acidity, pH, color, and suitability for juice manufacture.

FRUIT FLAVORS. APPARATUS AND PROCEDURE FOR SEPARATION AND ESTIMATION OF VOLATILE COMPONENTS. D. G. Guadagni and K. P. Dimick, Jour. Agr. and Food Chem. 1(19):1169-70, Dec. 9, 1953. A vacuum distillation apparatus particularly applicable to separation of volatile flavor compounds from fruit products is described. Data are presented to indicate its efficiency and reproducibility.

A NEW ISOMER OF CHLOROGENIC ACID FROM PEACHES. J. W. Corse, Nature 172(4382): 771-72, Oct. 1953. Neochlorogenic acid, the new isomer of chlorogenic acid, has been isolated from Elberta and Halford peaches by the use of countercurrent distribution.

DETERIORATION IN STORAGE (OF FRUIT AND VEGETABLE JUICES). A. L. Curl and W. F. Talburt. Chapter in Book, The Chemistry and Technology of Fruit and Vegetable Juice Production. (Edited by D. K. Tressler and M. A. Joslyn), The Avi Publishing Co., New York 3, N.Y. 1954. Problems encountered in storage are reviewed and discussed.

*PRINCIPLES AND PROCEDURES IN THE ISOLATION OF ENZYMES. S. Schwimmer and A. B. Pardee (with University of California), Advances in Enzymology, Vol. 14, pp. 375-409, 1953. Outlines principles and techniques for the isolation of enzymes. The main objective has been to present in systematic order the multitude of procedures which have led to successful enzyme purification, and to mention some of the more promising new methods which have recently appeared in the literature.

PHOSPHOGLYCERYL KINASE IN HIGHER PLANTS. B. Axelrod and R. S. Bandurdki (with California Institute of Technology), Jour. Biol. Chem. 204(2):939-48, Oct. 1953. A simple colorimetric method for the assay of phosphoglyceryl is proposed. Partial purification of the enzyme from pea seeds has been achieved. Pea seed phosphoglyceryl kinase has been characterized with respect to pH optimum stability, substrate specificity, substrate affinity, metal requirements, and inhibitors.

ENZYMES. COURSE OF ACTION OF POLYGALACTURONASE ON POLYGALACTURONIC ACIDS. R. M. McCready and E. A. McComb, Jour. Agr. and Food Chem. 1(19):1165-68, Dec. 9, 1953. The rate and apparent course of the reaction were independent of the molecular weights of substrates within the limits of 1,900 and 35,000. The reaction course produced galacturonic, di-, tri-, and probably tetragalacturonic acid. These acids appear among the hydrolysis products in very early stages and ultimately all are converted to galacturonic acid.

HISTOLOGICAL INVESTIGATIONS OF TEXTURE IN APPLES. I. COMPOSITION AND INFLUENCE OF HEAT ON STRUCTURE. R. M. Reeve and L. R. Leinbach, Food Research 18(6):592-603, Nov.-Dec. 1953. Gravenstein and other varieties were studied. Results of controlled heating tests, conducted over 4 seasons, and of chemical analyses are presented also.

HISTOLOGICAL INVESTIGATIONS OF TEXTURE IN APPLES. II. STRUCTURE AND INTERCELLULAR SPACES. R. M. Reeve, Food Research 18(6):604-17, Nov.-Dec. 1953. No consistent correlations between cell size and amount of intercellular space with saucing rates were shown by Delicious, Gravenstein, Newtown Pippin, Rome Beauty, and Winesap, but Gravenstein has larger cells, more intercellular space, and less cell-wall surface than any of the others. Delicious has smaller cells and more cell-wall surface. Data show that composition of middle lamella materials between joining cell walls has primary importance in texture.

PECTIN PRODUCTION. PILOT PLANT PRODUCTION OF LOW-METHOXYL PECTIN FROM CITRUS PEEL. R. P. Graham and A. D. Shepherd, Jour. Agr. and Food Chem. 1(16):993-1001, Oct. 28, 1953. A process is presented for preparation of low-methoxyl pectin from citrus peel, including preparation of the peel for extraction, extraction of pectin from peel, and clarification of extract and further processing of extract to prepare dry low-methoxyl pectin. All steps of the process have been carried out in pilot-plant equipment.

PECTIN GRADING. APPLICATION OF INTRINSIC VISCOSITY. H. A. Swenson, T. H. Schultz, and H. S. Owens, Jour. Agr. and Food Chem. 1(9):616-20, July 22, 1953. The study was undertaken to provide further information on pectin grading. A balance-plunger apparatus was developed, by which small deformations and breaking strengths can be measured. Grades obtained generally differ but curves for intrinsic viscosity vs. grade can be used to estimate grade by elasticity, if grade by breaking has been determined, or the reverse if grade by elastic modulus has been determined.

CRYSTALLINE 2,4-DINITROPHENYLHYDRAZONES OF D-FRUCTOSE. L. M. White and G. E. Secor, Jour. Amer. Chem. Soc. 75(24):6343, Dec. 20, 1953. The chemical properties of dioxane solvate and pyridine solvate are reported.

DETERMINATION OF ETHYLENE IN GASES. Patent No. 2,648,598 to F. Stitt, Y. Tomimatsu, and A. H. Tjensvold, Aug. 11, 1953. The gas to be analyzed is passed over heated mercuric oxide whereby mercury vapor is released into the gas in proportion to the concentration of ethylene. The gaseous reaction mixture is then contacted with a selenium strip. The degree of blackening of the strip is a measure of mercury released, hence the concentration of ethylene can be calculated from this figure.

FRUIT-CONTAINING FROZEN CONFECTIONS AND PROCESS FOR PRODUCING THE SAME. Patent No. 2,651,575 to W. F. Talburt and D. G. Guadagni, Sept. 8, 1953. Pieces of fruit, such as diced apples, are impregnated with full-flavored concentrated fruit juice. The fruit pieces are then incorporated in a frozen confection such as sherbet or ice cream. The impregnation increases the solids content of the fruit and enhances its flavor so that the pieces remain soft and free from iciness and have a better flavor than would pieces of untreated fruit.

LIVESTOCK FEEDS FROM CANNERY WASTES. W. D. Ramage, Research Achievement Sheet 165(C), 2 pages, Agr. Research Service, U. S. Dept. Agr., Nov. 1953. A summary of achievement in research, with selected references and estimate of costs.

PHARMACOLOGY

3,4-DIHYDROXYPHENYLACETIC ACID--A METABOLITE OF QUERCETIN. C. W. Murray, A. N. Booth, F. DeEds, and R. H. Wilson, Jour. Amer. Chem. Soc. 75(13): 3289, July 1953. One of the breakdown products of quercetin has been isolated recently from rabbit urine in crystalline form, and identified as 3,4-dihydroxyphenylacetic acid.

POULTRY PRODUCTS

PREPARATION OF STABLE FROZEN PUDDINGS. H. L. Hanson, K. D. Nishita, and H. Lineweaver, Food Technol. 7(1):462-65, Nov. 1953. Preparation of desserts of a cornstarch-pudding or soft-custard consistency that are stable to freezing and limited frozen storage is described. Elimination of the separation and curdled appearance of products prepared by the usual formulas is accomplished by substitution of waxy rice flour for part or all of the usual thickening agents.

RELATIVE CHEMICAL, FUNCTIONAL AND ORGANOLEPTIC STABILITIES OF ACIDIFIED AND GLUCOSE-FREE WHOLE EGG POWDERS. L. Kline, T. T. Sonoda, H. L. Hanson, and J. H. Mitchell, Jr. (with Quartermaster Food & Container Institute for the Armed Forces, Chicago), Food Technol. 7(11):456-62, Nov. 1953. Acidification, an empirical method of stabilizing whole egg powder, is shown to owe its effectiveness to the retarding effect of the increased acidity on glucose-induced phospholipid and protein deteriorations. Chemical measurements provide evidence that inhibition of these Maillard-type reactions by acidification is incomplete, thus accounting for the markedly inferior stability of acidified as compared with glucose-free powder.

EFFECT OF VARIOUS ENRICHMENT BROTHS AND SELECTIVE AGARS UPON THE GROWTH OF SEVERAL SPECIES OF SALMONELLA. G. J. Banwart and J. C. Ayres (contract publication, Iowa State College), Applied Microbiol. 1(6):296-301, Nov. 1953. Three enrichment broths and four selective agars were studied and detailed conclusions are reported.

A COMPARISON OF SIX ENRICHMENT MEDIA FOR ISOLATING SALMONELLA PULLORUM FROM EGG PRODUCTS. N. A. Hurley and J. C. Ayres (contract publication, Iowa State College), Applied Microbiology 1(6):302-306, Nov. 1953. Six enrichment fluids were evaluated for ability to promote Salmonella pullorum selectively and inhibit Escherichia coli, Proteus morganii, Pseudomonas aeruginosa, and Alcaligenes faecalis.

AN X-RAY INVESTIGATION OF AIR-DRIED LYSOZYME CHLORIDE CRYSTALS: THE THREE DIMENSIONAL PATTERSON FUNCTION. Robert B. Corey, J. Donohue, K. N. Trueblood (Calif. Inst. Technol.) and K. J. Palmer (WURB), Acta Crystallographica 5, Part 6, pp. 701-10, Nov. 1952. The complete Patterson function was calculated and the Patterson diagram was used in attempts to gain information on arrangement and configuration of the protein molecules.

VEGETABLES

A RAPID TEST FOR ADEQUACY OF BLANCHING IN FROZEN BRUSSELS SPROUTS. M. P. Masure, W. C. Dietrich, F. E. Lindquist, and L. C. Blackwood, Food Technol. 7(9):363-66, Sept. 1953. In agreement with earlier work, the peroxidase test served as a satisfactory index of adequacy of blanching and offered a good margin of safety. Addition of a 0.5-3 percent solution of hydrogen peroxide to cut surfaces of sprout halves brought about a rapid development of pinkish-orange color in under-blanched materials. Extent of color development paralleled roughly the peroxidase content of the samples.

BACTERICIDAL ACTION OF SUBTILIN ON BACILLUS STEAROTHERMOPHILUS. H. D. Michener, Applied Microbiol. 1(5):215-17, Sept. 1953. During an investigation of the effect of subtilin on spores of Bacillus stearothermophilus, it was found that two stocks of the same strain responded differently to subtilin. This paper describes this difference in behavior and shows that subtilin inactivates (probably kills) germinating spores of both stocks, but that many of the spores of one stock remain dormant under these experimental conditions and, as a result, remain insensitive to subtilin.

BACTERIAL CULTURE. RAPID MASS PROPAGATION OF SOME BACTERIA OF THE BACILLUS GENUS. J. C. Lewis, K. Ijichi, T. F. Sugihara, and J. A. Garibaldi, Jour. Agr. and Food Chem. 1(14):897-99, Sept. 30, 1953. Many stocks of bacteria of the genus Bacillus resemble bakers' and fodder yeast in rate of production and yield of cells obtained under aerated submerged conditions. Possible advantages of commercial processes based on such bacteria are discussed.

REACTION OF DIACETYL AND CYCLOHEXYLAMINE. J. F. Carson, Jour. Amer. Chem. Soc. 75(17):4300-02, Sept. 1953. In connection with investigations on non-enzymatic browning of vegetables, the reactions of some simple alpha-hydroxy-carbonyl and dicarbonyl compounds with primary aliphatic amines have been investigated. In particular, the reactions of diacetyl have been examined, since diacetyl has been reported as a degradation product resulting from the reaction of sugars and amino acids.

REACTION OF ACETOIN AND HYDROXYACETALDEHYDE WITH CYCLOHEXYLAMINE. J. F. Carson, Jour. Amer. Chem. Soc. 75(17):4337-38, Sept. 1953. The non-enzymatic browning of vegetables, which is generally attributed to reaction of amino groups of amino acids or proteins with reducing sugars was investigated by the use of simple alpha-hydroxy-carbonyl compounds and aliphatic amines as models for sugars and amino acids. The reactions of acetoin and hydroxyacetaldehyde with primary aliphatic amines have also been studied.

REACTION BETWEEN GLYCINE AND THE HEXOSE PHOSPHATES. S. Schwimmer and H. S. Olcott, Jour. Amer. Chem. Soc. 75(19):4855-56, Oct. 1953. The hexose phosphates (except glucose-1-phosphate), which are reported to accumulate in certain vegetables during storage, undergo browning reactions with glycine in aqueous solution, resulting in liberation of inorganic phosphate. Extent of browning of the C-6 mono-phosphorylated glucose and fructose is greater than that of the corresponding free sugars. These reactions can be detected fluorometrically by spraying paper chromatograms of the phosphates with glycine.

INFLUENCE OF PIECE SIZE ON PRODUCTION AND QUALITY OF DEHYDRATED IRISH POTATOES. M. Simon, J. R. Wagner, V. G. Silveira, and C. E. Hendel (with Quartermaster Food and Container Institute for the Armed Forces, Chicago), Food Technol. 7(11):423-28, Nov. 1953. A study has been made of effects of piece size and shape, and of calcium chloride treatment on preparational losses, drying time, bulk density, rehydration rate, and relative preference values of dehydrated Irish potatoes.

ENZYMES. ENZYME SYSTEMS OF THE WHITE POTATO. S. Schwimmer, Jour. Agr. and Food Chem. 1(17):1063-69, Nov. 11, 1953. A survey of literature on enzymes of white potato and on recent advancements in studies on those enzymes.

FEED SUPPLEMENTS. GENUS BACILLUS AS A SOURCE OF GROWTH STIMULANTS. J. C. Lewis, K. Ijichi, T. F. Sugihara, P. A. Thompson, N. S. Snell, G. Alderton, and J. A. Garibaldi, Jour. Agr. and Food Chem. 1(19):1159-63, Dec. 9, 1953. A search for antibiotic feed supplements has been centered on the genus Bacillus because many strains of bacteria of this group grow very rapidly on simple media to produce a wide variety of antibiotics. The empirical approach, involving chick feeding tests at an early stage of selection, has yielded several stocks which gave 5 to 10 percent greater growth responses than the control chicks at 10 weeks. Progress of more intensive investigations of these stocks is described.

AIC-360, CONTROL OF DISCOLORATION OF PEELED WHITE POTATOES AND METHODS FOR ANALYSIS OF TREATING SOLUTIONS. W. R. Mullins, R. L. Olson, and R. H. Treadway (With Eastern Regional Research Laboratory, Philadelphia 18, Pa.), August 1953, mimeographed. Suggestions are offered for a process to be used in plants. Methods are presented for the measurement of sodium bisulfite in treating solutions, including solutions that contain citric acid or other acids.

*TREATMENT AND PACKAGING OF PREPEELED POTATOES. R. H. Treadway (Eastern Regional Research Laboratory) and R. L. Olson, Amer. Potato Jour. 30(12): 283-88, Dec. 1953, and Pre-Pack Age 7(4):13-16, Dec. 1953. Concerned with problems involved in supplying prepeeled potatoes to restaurants and others engaged in food service.

WOOL

PREVENTION OF SOIL REDEPOSITION IN TEXTILE CLEANING OPERATIONS BY PROTEINS AND OTHER POLYMERIC MATERIALS. W. Fong and H. P. Lundgren, Text. Res. Jour. 23(11):769-75, Nov. 1953. The highly effective action of certain proteins and synthetic polymeric materials in preventing redeposition of carbon black from an aqueous alkaline-built alkylarylsulfonate detergent solution is described in this report.

POLYMERIZATION OF BETA-PROPIOLACTONE IN WOOL. W. G. Rose and H. P. Lundgren, Text. Res. Jour. 23(12):930-36, Dec. 1953. The reaction of propiolactone with wool has been studied with the purpose of increasing rate of reaction within the fiber, while still retaining the enhanced felting qualities of the modified wool.

METHOD OF WOOL SCOURING WITH COMPOSITION CONTAINING SUINT, ALCOHOLS, KETONES, AND INORGANIC ELECTROLYTES. Patent No. 2,655,428 to H. P. Lundgren and W. Fong, Oct. 13, 1953. Raw wool is scoured with an aqueous liquor containing wool suint, an alcohol or ketone and a neutral salt. Addition of the alcohol or ketone and the salt greatly increases the efficiency of the scouring process so that the scoured wool contains a lower proportion of grease.

RUBBER

Publications listed below originated from the Natural Rubber Extraction and Processing Investigations Laboratory at the U. S. Natural Rubber Research Station, Salinas, Calif. The work of this unit was discontinued on April 30, 1953. For earlier publications see AIC-321, Supplements 2 and 3.

ISOLATION OF PALMITIC, STEARIC, AND LINOLEIC ACIDS FROM GUAYULE RESIN. T.F. Banigan, Jr., and J. W. Meeks, Jour. Amer. Chem. Soc. 75(15):3829-30, Aug. 1953. Studies have revealed the presence of linoleic, stearic, and palmitic acids, and confirmed the presence of cinnamic acid in the resin saponifiables.

DETERMINING RUBBER HYDROCARBON IN RUBBER-BEARING PLANTS. J. W. Meeks, R. V. Crook, C. E. Pardo, Jr., and F. E. Clark, Analyt. Chem. 25(10):1535-38, Oct. 1953. An accurate method for determination of rubber hydrocarbon in rubber-bearing tissue has been developed. The essential features are shrub preparation, benzene extraction by means of a mechanical shaker, and rubber hydrocarbon determination by bromination of a benzene rubber solution.

FRUIT AND VEGETABLE CHEMISTRY LABORATORY
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AIC-365, A DIRECT MICROSCOPIC METHOD MODIFIED FOR ESTIMATION OF MICRO-ORGANISMS IN CALIFORNIA FROZEN CITRUS CONCENTRATES. E. R. Wolford, Nov. 1953. Use of reconstituted, pH 6 juice in the dye solution, drying the slide under infrared and staining with a particular solution are suggested as effective techniques for citrus products.

CHROMATOSTRIPS FOR IDENTIFYING CONSTITUENTS OF ESSENTIAL OILS. J. M. Miller and J. G. Kirchner, Analyt. Chem. 25(7):1107-09, July, 1953. As a means of identification of certain components of essential oils, reactions have been performed directly on chromatostrips and the products chromatographed, or the reactions have been carried out on a micro scale and the reaction mixture chromatographed.

FRUIT AND VEGETABLE PRODUCTS LABORATORY, Prosser, Washington
JUICE QUALITY OF DELICIOUS APPLES AS AFFECTED BY METHOD OF FRUIT HANDLING. A. M. Neubert, G. H. Carter, J. L. Henry, J. E. Brekke, D. W. Graham, A. Van Doren, and R. M. Bullock (with Tree Fruit Experiment Station, part of Washington Agricultural Experiment Stations, Wenatchee, Wash.), Food Technol. 7(8):324-29, Aug. 1953. Wide differences were found in the quality of juices obtained from standard Delicious apples, depending on their maturity, grade, and preprocessing treatment. Ripening after harvest was the most important factor in improving juice quality of this variety.